



May 3, 2006

Mr. Charles Terreni
Chief Clerk/Administrator
Public Service Commission of South Carolina
P. O. Drawer 11649
Columbia, South Carolina 29211

Re: Docket No. 2006-1-E

Dear Mr. Terreni:

Enclosed for filing is the original plus one copy of the testimony of Carolina Power & Light Company d/b/a Progress Energy Carolinas, Inc. witnesses Bruce P. Barkley and Dewey S. Roberts, II relevant to the above-referenced docket. In accordance with Commission directive in Docket No. 2005-83-A, also enclosed is a Notice of Filing. All parties of record have been served.

Very truly yours,

A handwritten signature in dark ink, appearing to read 'Len S. Anthony', written over a horizontal line.

Len S. Anthony
Deputy General Counsel – Regulatory Affairs

LSA:mhm

Enclosures

cc: All parties of record

233886

STATE OF SOUTH CAROLINA
BEFORE THE PUBLIC SERVICE COMMISSION

DOCKET NO. 2006-1-E

In the Matter of:

Carolina Power & Light Company,)
d/b/a Progress Energy Carolinas, Inc., -)
Annual Review of Base Rates for Fuel)
Costs)


CERTIFICATE OF SERVICE

I, Len S. Anthony, hereby certify that the testimony and exhibits of Carolina Power & Light Company d/b/a Progress Energy Carolinas, Inc. witnesses in Docket 2006-1-E have been served on all parties of record either electronically, by hand delivery or by depositing said copy in the United States mail, postage prepaid, addressed as follows this the 3rd day of May 2006:

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PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA

DOCKETING DEPARTMENT

NOTICE OF FILING

DOCKET NO. 2006-1-E

CAROLINA POWER & LIGHT COMPANY d/b/a PROGRESS ENERGY CAROLINAS, INC.
- ANNUAL REVIEW OF BASE RATES FOR FUEL COSTS.

S.C. Code Ann. Section 58-27-865 (Supp. 2004) established a procedure for annual hearings to allow the Commission and all interested parties to review the fuel purchasing practices and policies of the Company and for the Commission to determine if any adjustment in the fuel cost recovery mechanism is necessary and reasonable.

On May 3, 2006 Carolina Power & Light Company d/b/a Progress Energy Carolinas, Inc. ("the Company") submitted testimony in support of a change in rates based solely on the cost of fuel during the period April 1, 2005 through March 31, 2006.

The Company has requested that the Commission adjust the base fuel factor established in Docket No. 2005-1-E by an increment of 0.354 cents per kWh. The current base fuel factor is 2.2 cents per kWh, and the increment is the difference between the current factor and the requested factor of 2.554 cents per kWh.

Public Service Commission of SC
Attention: Docketing Department
PO Drawer 11649
Columbia, SC 29211

Date: _____

**PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA
DOCKET NO. 2006-1-E
DIRECT TESTIMONY OF
PROGRESS ENERGY CAROLINAS, INC.**

WITNESS DEWEY S. ROBERTS II

1 **Q. Mr. Roberts will you please state your full name, occupation, and address?**

2 **A.** My name is Dewey S. Roberts II (Sammy). I am employed by Progress Energy
3 Carolinas, Inc. as Manager – Power System Operations in the System Planning and
4 Operations Department. My business address is 3401 Hillsborough St, Raleigh,
5 North Carolina.

6 **Q. Please summarize briefly your educational background and experience.**

7 **A.** I graduated from North Carolina State University in 1987 with a B.S. Degree in
8 Electrical Engineering. I also obtained a Master of Science Degree in Electrical
9 Engineering from North Carolina State University in 1990 and a Master of Business
10 Administration Degree from North Carolina State University in 2004. I am a
11 member of the Institute of Electrical and Electronics Engineers (IEEE). I am also a
12 registered Professional Engineer in the state of North Carolina and I am recognized
13 as a Certified System Operator by the North American Electric Reliability Council.
14 I joined the Company in 1990 and have held several engineering and management
15 positions in Nuclear Engineering, Engineering and Technical Services, System
16 Operator Training, Portfolio Management, Transmission Services, and Power
17 System Operations. These positions include: Project Engineer, Manager -
18 Transmission Services, and Manager-Power System Operations. In November
19 2003, I assumed the position of Manager – Power System Operations in the Power

1 System Operations Section of Progress Energy Carolinas, Inc. System Planning and
2 Operations Department. In my current position, I am responsible for managing
3 safe, reliable, economic and NERC/FERC compliant operations for the Progress
4 Energy – Carolinas' eastern and western control area power systems.

5 **Q. What is the purpose of your testimony here today?**

6 **A.** The purpose of my testimony is to review the operating performance of the
7 Company's nuclear, fossil, combined cycle, combustion turbine, and hydroelectric
8 generating facilities during the period of April 1, 2005 through March 31, 2006.

9 **Q. Describe the types of generating facilities owned and operated by the**
10 **Company.**

11 **A.** The Company owns and operates a diverse mix of generating facilities consisting of
12 four (4) hydro plants, forty seven (47) combustion turbines, three (3) combined
13 cycle units, nineteen (19) fossil steam generating units, and four (4) nuclear units.

14 **Q. Why does the Company utilize such a diverse mix of generating facilities?**

15 **A.** Each type of facility has different operating and installation costs and is generally
16 intended to meet a certain type of loading situation. In combination, the diversity of
17 the system, in conjunction with power purchases made when doing so is more cost-
18 effective than using a Company owned generating unit, allows the Company to
19 meet the continuously changing customer load pattern in a reasonable, cost-
20 effective manner. The combustion turbines, which have relatively low installation
21 costs but higher operating costs, are intended to be operated infrequently. They
22 also provide resources that can be started in a relatively short time for emergency
23 situations. In contrast, the large coal and nuclear steam generating plants have

1 relatively high installation costs with lower operating costs, and are intended to
2 operate in a manner to meet the constant level of demand on the system. Based on
3 the load level that the Company is called on to serve at any given point in time, the
4 Company selects the combination of facilities which will produce electricity in the
5 most economical manner, giving due regard to reliability of service and safety. This
6 total cost optimization approach provides for overall minimization of the total cost
7 of providing service.

8 **Q. Please elaborate on the intended use of each type of facility the Company uses**
9 **to generate electricity.**

10 **A.** As a general rule, peaking resources such as combustion turbines, are constructed
11 with the intention of running them very infrequently, i.e., only during peak or
12 emergency conditions. Therefore, as a rule, they have a very low capacity factor,
13 generally less than 10%. Because combustion turbines can be started quickly in
14 response to a sharp increase in customer demand, without having to continuously
15 operate the units, they are very effective in providing reserve capacity. Intermediate
16 facilities are intended to operate more frequently and are subject to daily load
17 variations. Because these facilities take some time to come from a cold shut down
18 situation, they are best utilized to respond to the more predictable system load
19 patterns. Additionally, these plants, located across the Company's service territory,
20 contribute to overall system reliability. As a rule, they operate with capacity factors
21 in the range of 20% to 60%. The Company's intermediate facilities are
22 predominately our older coal plants and combined cycle unit. Baseload facilities
23 are intended and designed to operate on a near continuous basis with the exception

1 of outages for required maintenance, modifications, repairs, major overhauls, or for
2 refueling in the case of nuclear plants. These plants are traditionally called on to
3 operate in the 60% and greater capacity factor range. The Company's four nuclear
4 units and four larger coal units constitute the Company's baseload facilities.

5 **Q. How much electricity was generated by each type of Company generating unit**
6 **in the 12 month period ending March 31, 2006?**

7 **A.** For the twelve-month period ending March 31, 2006, the Company generated
8 62,443,550 megawatt hours of electricity. Nuclear plants generated 45.12%, fossil
9 plants generated 49.73%, combined cycle and combustion turbine units generated
10 3.96%, and hydroelectric units generated 1.20% of the total amount of electricity
11 generated.

12 **Q. Were there any increases in your generating capability during period covered**
13 **by your testimony?**

14 **A.** Yes. During the Brunswick 2 Spring 2005 refueling outage, modifications were
15 completed on the final phase of a power uprate project. After testing and
16 performance observations during the year, the Maximum Dependable Capacity of
17 Brunswick 2 was increased by 37 megawatts effective January 1, 2006. This brings
18 the net rating of the unit to 937 megawatts.

19 **Q. How does the Company ensure that it operates these types of generating**
20 **facilities as economically as possible?**

21 **A.** The Company has a central Energy Control Center which monitors the electricity
22 demands within our service area. The Energy Control Center regulates and
23 dispatches available generating units in response to customer demand in a least cost

1 manner. Sophisticated computer control systems match the changing load with
2 available sources of power. Personnel at the Energy Control Center, in addition to
3 being in contact with the Company's generating plants, are also in communication
4 with other utilities bordering our service territory. In the event a plant is suddenly
5 forced off-line, the interconnections with neighboring utilities help to ensure that
6 service to our customers will go uninterrupted. Additionally, the interconnections
7 allow us access to the unloaded capacity of neighboring utilities so that our
8 customers will be served by the lowest cost power available through inter-utility
9 purchases.

10 **Q. How does the Company determine when it needs to purchase power?**

11 **A.** The Company is constantly reviewing the power markets for purchase
12 opportunities. We buy when there is reliable power available that is less expensive
13 than the marginal cost of all available resources to the Company. This review of
14 the power markets is done on an hourly, daily, weekly, monthly basis. Also, with
15 regard to long term resource planning, we always evaluate purchased power
16 opportunities against self build options.

17 **Q. During the review period April 1, 2005 through March 31, 2006, did the**
18 **Company prudently operate its generating system within the guidelines**
19 **discussed in regard to the three types of facilities?**

20 **A.** Yes. Two different measures are utilized to evaluate the performance of generating
21 facilities. They are equivalent availability factor and capacity factor. Equivalent
22 availability factor refers to the percent of a given time a facility was available to
23 operate at full power if needed. Capacity factor measures the generation a facility

1 actually produces against the amount of generation that theoretically could be
2 produced in a given time period, based on its maximum dependable capacity.
3 Equivalent availability factor describes how well a facility was operated, even in
4 cases where the unit was used in a load following application. Our combustion
5 turbines (including the Richmond County Combined Cycle Unit) averaged 94.05%
6 equivalent availability and a 6.63% capacity factor for the twelve-month period
7 ending March 31, 2006. These performance indicators are consistent with the
8 combined cycle and combustion turbine generation intended purpose. The
9 generation was almost always available for use, but operated minimally. Our
10 intermediate (or cycling) coal fired units, had an average equivalent availability
11 factor of 90.85% and a capacity factor of 64.07% for the twelve-month period
12 ending March 31, 2006. Again, these performance indicators are indicative of good
13 performance and management. Our fossil baseload units had an average equivalent
14 availability of 90.86% and a capacity factor of 70.16% for the twelve-month period
15 ending March 31, 2006. Thus, the fossil baseload units were also well managed
16 and operated. For the twelve-month period ending March 31, 2006, the Company's
17 nuclear generation system achieved a net capacity factor of 93.75%. Excluding
18 outage time associated with reasonable outages, such as refueling, the nuclear
19 generation system's net capacity factor for this period rises to approximately
20 98.33%. Therefore, pursuant to S.C. Code Ann. § 58-27-865(F), since the adjusted
21 capacity factor exceeds 92.5%, the Company is presumed to have made every
22 reasonable effort to minimize the cost associated with the operation of its nuclear
23 generation.

1 **Q: How did the performance of the Company's nuclear system compare to the**
2 **industry average?**

3 **A:** As mentioned in the response to the previous question, during the period April
4 1, 2005 through March 31, 2006, the Company's nuclear generation system
5 achieved a net capacity factor of 93.75%. In contrast, the NERC five-year average
6 capacity factor for 2000-2004 for all commercial nuclear generation in North
7 America was 87.45%. The Company's nuclear system incurred a 1.88% forced
8 outage rate during the twelve-month period ending March 31, 2006 compared to the
9 industry average of 4.76% for similar size nuclear generators. These performance
10 indicators reflect good nuclear performance and management for the review period.

11 **Q. How did the Company's fossil units perform as compared to the industry?**

12 **A.** Our entire fossil steam generation fleet operated well during the 12 months ending
13 March 31, 2006, achieving an equivalent availability factor of 90.93% for this
14 period. This performance indicator exceeds the most recently published NERC
15 average equivalent availability for coal plants of 84.90%. The NERC average
16 covers the period 2000-2004 and represents the performance of 896 coal-fired units.
17 Equivalent availability is a more meaningful measure of performance for coal
18 plants than capacity factor because the output of our fossil units varies significantly
19 depending on the level of system load. For the twelve-month period ending March
20 31, 2006, our larger fossil units, Roxboro Units 2, 3, and 4 and Mayo Unit 1,
21 operated at equivalent availabilities of 81.79%, 94.69%, 93.64%, and 93.32%
22 respectively. The 81.79% equivalent availability for Roxboro 2 is a result of a

1 major spring 2005 planned outage in which a selective catalytic reduction emissions
2 control system was installed.

3 As I mentioned earlier, the baseload coal units achieved an average equivalent
4 availability of 90.86%. These performance indicators compare well with the
5 industry average equivalent availability factor of 83.98% for 95 similarly sized
6 fossil units.

7 **Q. How did the Company's hydroelectric units perform during the review**
8 **period?**

9 **A.** The usage of the hydro facilities on the Company's system is limited by the
10 availability of water that can be released through the turbine generators. The
11 Company's hydro plants have very limited ponding capacity for water storage. The
12 Company operates the hydro plants to obtain the maximum generation from them;
13 but because of the small water storage capacity available, the hydro units have been
14 primarily utilized for peaking and regulating purposes. This operation maximizes
15 the economic benefit of the units. The hydroelectric units had an equivalent
16 availability of 97.93% and operated at a capacity factor of 37.11% for the twelve-
17 month period ending March 31, 2006. The 5 year industry average for
18 hydroelectric generation as published in NERC's most recent report reflects an
19 average equivalent availability of 89.04% and an average capacity factor of
20 40.78%. These performance indicators show that the Company managed the
21 hydroelectric facilities well, keeping them almost always available for economic
22 use when water was available.

23 **Q. Are you presenting any exhibits with your testimony?**

1 **A.** Yes. Roberts Exhibit No. 1 is a graphic representation of the Company's generation
2 system operation for the twelve-month period ending March 31, 2006.

3 **Q.** **Did the Company prudently operate and dispatch its generation resources**
4 **during the period April 1, 2005 through March 31, 2006 in order to minimize**
5 **its fuel costs?**

6 **A.** Yes.

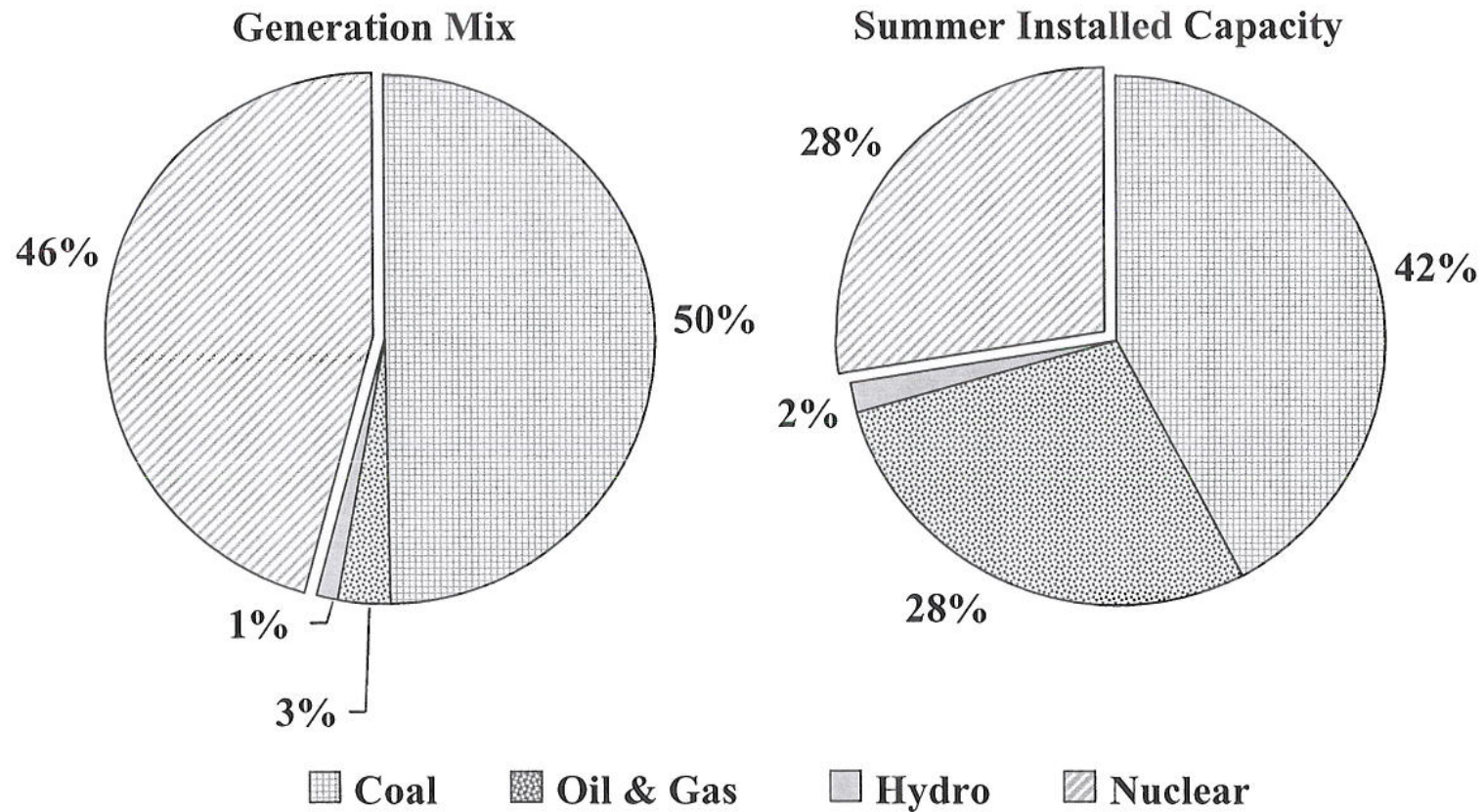
7 **Q.** **Does this conclude your testimony?**

8 **A.** Yes.

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**Comparison of Progress Energy Carolinas
Installed Generating Capacity
to Actual Generation Mix
April 1, 2005 through March 31, 2006**



**PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA
DOCKET NO. 2006-1-E
DIRECT TESTIMONY OF PROGRESS ENERGY CAROLINAS, INC.**

WITNESS BRUCE P. BARKLEY

1 **Q. Please state your name, address, and position.**

2 A. My name is Bruce P. Barkley and my business address is 410 S. Wilmington Street,
3 Raleigh, North Carolina. My position is Manager–Fuel Forecasting and Regulatory
4 Support for Progress Energy Carolinas, Inc. (“PEC”)

5 **Q. Please describe your educational background and professional experience.**

6 A. I obtained a Bachelor of Science Degree in Business Administration with a
7 concentration in Accounting from the University of North Carolina at Chapel Hill
8 in 1984 and an MBA Degree from Wake Forest University in 1999. I obtained my
9 CPA license in 1987. Prior to joining Progress Energy, I held various positions
10 with Public Service Company of North Carolina, Inc., where I was responsible for
11 regulatory filings and reports submitted to the North Carolina Utilities Commission.
12 (“NCUC”) I joined Progress Energy in the Regulatory Services Section in 2001
13 and transferred to my current position in the Regulated Fuels Department in 2005. I
14 am responsible for fuel forecasting, reporting and associated regulatory matters.

15 **Q. Have you previously presented testimony regarding fuel clauses?**

16 A. Yes, I appeared before the South Carolina Public Service Commission (“SCPSC”)
17 from 2003-2005 and in numerous fuel cases before the NCUC.

18 **Q. What is the purpose of your testimony?**

19 A. The purpose of my testimony is to review PEC’s fuel cost for the historical period
20 under review in this proceeding, April 2005 through March 2006, support the

1 reasonableness of these costs, present projected fuel cost for the period April 2006
2 through June 2007 and recommend a fuel factor to be effective July 1, 2006. I will
3 provide 7 exhibits to support my testimony.

4 **Q. Please summarize PEC's fuel cost and inventory levels for the review period.**

5 A. Barkley Exhibit No. 1 summarizes PEC's fossil fuel costs for the review period
6 including quantities purchased and consumed and the beginning and ending
7 inventory levels. The price of delivered coal increased by \$9.79 per ton (17%), up
8 to \$67.56/ton, due primarily to the expiration of contracts and replacement with
9 contracts priced at current market values as well as increases in the cost of rail
10 transportation. The significant upward movement in the cost of coal since 2002 is
11 illustrated at Barkley Exhibit No. 2. Inventory levels for both coal and oil ensured
12 that an adequate supply of fuel at reasonable cost was available to meet customer
13 needs during the review period. The price of natural gas escalated sharply during
14 the review period, up by \$3.21/mmbtu, (39%) due to increased prices. Recent
15 history indicating the large increase in the price of this commodity is shown at
16 Barkley Exhibit No. 3.

17 **Q. Please describe the Company's coal procurement practices.**

18 A. The Company continues to follow the same procurement practices that it has
19 historically followed, and a summary of those practices is as follows:

- 20 1. **Estimating Fuel Requirements:** Fuel requirements are estimated annually
21 using a long-term forecasting simulation model and monthly using a short-
22 term simulation model. Both simulation models factor in load forecast,
23 system planning and capacity factors for all generating plants.

2. **Establish Inventory Requirements.** PEC uses a systematic inventory modeling process developed by North Carolina State University to evaluate probabilities and quantify potential risks that could potentially impact inventory levels. The outcome of the model is optimal inventory levels for each plant given potential risks such as losing a coal handling system or a strike by the railroad.
3. **Monitoring Ongoing Fuel Requirements.** On a monthly basis, there is a review and evaluation of current inventory levels, supplier performance with respect to shipments and forecasted short-term requirements and commitments to determine additional fuel requirements.
4. **Develop Qualified Supplier List.** A list of qualified suppliers is maintained throughout the year and, to the extent possible, capabilities of suppliers are evaluated including current performance, reserves, coal quality, railroad origination, condition of supplier and loading capabilities.
5. **Bid Requests.** At least once a year, a formal solicitation is sent out to all of our qualified suppliers for spot and/or longer term coal.
6. **Bid Evaluation.** Contracts are awarded after a thorough evaluation process including an economic evaluation, financial and credit review of the supplier, performance evaluation, coal quality conformance with plant requirements, supplier quality controls, test burns (if necessary) and compliance with federal environmental regulations.
7. **Spot Purchases.** To supplement our fuel supply, short-term spot offers are solicited as needed and purchases made in accordance to needs. These

purchases may be for as few as one train. In today's environment with coal availability being limited, suppliers have multiple options and responses to vendor proposals must be timely.

8. **Monitoring of Purchases.** Purchases are administered, monitored and expedited as needed to ensure compliance with contractual terms.

9. **Quality Control.** The Company requires suppliers to sample, analyze and weigh all coal shipped under the agreements using independent third party labs (ASTM Standards) and weigh with certified scales. Three to four samples are typical with one sample being a referee sample should a dispute arise. Sample analyses are used for contractual quality pricing adjustments. Weighing is done at the mine using certified scales and, if no scales are certified at the mine, certified railroad scales are used.

Q. What types of coal does PEC burn in its plants?

A. PEC's coal-fired plants are all designed to burn high BTU bituminous coal. Environmental requirements require coal that is relatively low in sulfur. With the exception of Roxboro Unit 4 and Mayo Unit 1, all coal-fired plants in North Carolina must burn coal having a sulfur dioxide (SO₂) content no greater than 2.3 lbs SO₂/mmbtu. Roxboro Unit 4 and Mayo Unit 1 must burn coal having an SO₂ content no greater than 1.2 lbs. SO₂/mmbtu, which is known as compliance coal. Historically, compliance coal has comprised about one-third of our annual coal requirements, or about 4 million tons.

Q. Does the sulfur limitation influence the cost of the coal?

1 A. Yes, from at least two perspectives. First, under current environmental regulations,
2 the operator of a coal fired unit must hold an SO2 emission allowance for every ton
3 of SO2 emitted during the operation of that unit. SO2 emission allowances have a
4 market value and thus influence the cost of coal. The lower sulfur coals will emit
5 less SO2 and will therefore require less emission allowances. Thus, increases in the
6 cost of SO2 allowances will tend to increase the premium for lower sulfur coal.
7 PEC sees a significant difference, ranging from approximately \$3.50 up to
8 approximately \$7 dollars per ton during the review period, between the market
9 prices for compliance coal at Roxboro Unit 4 and Mayo Unit 1 and the other plants.
10 Secondly, the SO2 limits preclude, at the present time, the use of most Northern
11 Appalachian coals or coals from the Illinois Basin. Coals from these regions
12 typically have sulfur contents greater than PEC is allowed to burn and they also
13 would require increased transportation costs. Therefore, PEC's domestic sources of
14 coal are currently limited to the low to mid-range sulfur coals predominately
15 located in the Central Appalachia ("CAPP") region which includes West Virginia,
16 Virginia and Kentucky.

17 **Q. How is coal transported to PEC?**

18 A. Coal is transported from CAPP to individual plants by rail using either the CSX
19 railway or the Norfolk & Southern (NS) railway. PEC receives a limited amount of
20 coal by truck at our Asheville Plant and since January 2003 has been able to receive
21 foreign coal by barge at our Sutton Plant located near Wilmington, NC. The
22 Roxboro and Mayo plants (which are our largest coal plants, with total generating
23 capacities of 3207 MW) and the Asheville plant are served solely by NS. The

1 Robinson, Weatherspoon, and Sutton Plants are served solely by CSX. The Lee
2 and Cape Fear Plants are served by both CSX and NS. PEC's total coal fired
3 generation capacity is 5267 MW, so the Roxboro and Mayo base load plants, which
4 are served exclusively by NS, consume the majority of PEC's coal. To minimize
5 transportation costs, PEC attempts to negotiate the most advantageous rates
6 possible. In 2002, PEC challenged the rates of NS before the Surface
7 Transportation Board ("STB"), after spending over \$2 million in legal fees; the
8 STB ruled against PEC and approved NS's rates. PEC, through a consortium of
9 shippers, is presently participating in two proceedings before the STB in an attempt
10 to lower its rail costs. As noted above, PEC is now using water and truck
11 transportation when possible to transport coal in order to lower its transportation
12 costs and demonstrate to the railroads that PEC will take advantage of other
13 transportation opportunities when they arise.

14 **Q. How does PEC make the determination of how much coal to place under**
15 **contract and how much to depend on the spot market?**

16 A. The decision of how much to have under contract is based on factors such as price
17 trends, expected market volatility, known or anticipated issues that could impact
18 supply, etc. For example, if market forecasts indicate stable or declining prices, the
19 amount under contract at any point in time would likely be less than if prices or
20 market volatility were increasing. This decision is always a balancing act to ensure
21 a reliable supply of the quantities and quality needed without being over or under
22 committed at any given time. These decisions are implemented by negotiating
23 contracts with terms of 1 year or less (spot purchases) and contracts having terms

1 greater than one year (term purchases). In recent years, PEC has generally not
2 entered into contracts exceeding 3 years because of the higher level of uncertainty
3 associated with price forecasts for longer periods and the fact that suppliers were
4 not willing to commit to reasonable firm pricing for longer periods of time.

5 **Q. What changes do you see in the coal industry that will impact the Company's**
6 **cost of coal in 2005 and 2006?**

7 A. PEC anticipates no near term relief in coal prices. None of the market forces that
8 caused the run up in coal prices indicated on Barkley Exhibit No. 2 are likely to
9 cease. These include production costs for coal mining, heavy demand for coal both
10 domestically and internationally, environmental requirements and the fact that coal
11 remains much less expensive than natural gas. Consequently, as current below-
12 market contracts expire and are replaced with new contracts, they will be at higher
13 prices. Based on these factors, the Company's fuel costs are projected to be higher
14 in the July 2006 through June 2007 time period than experienced during the period
15 of April 2005 through March 2006. Further, PEC anticipates increases in the price
16 of rail transportation due to fuel surcharges passed along by the rail providers.
17 These surcharges are based on the price of crude oil which has reached record high
18 levels recently. The total delivered cost of coal is expected to increase from \$67.56
19 per ton during the review period up to \$72.91 per ton for the year ending June 30,
20 2007. The use of fuel surcharges by the railroads is an issue that PEC is currently
21 challenging as part of a consortium of shippers before the STB.

22 **Q. Please describe your procurement practices for natural gas.**

1 A. PEC follows a process that is very similar to that discussed earlier for coal.
2 Production costing models are used to project future demands. Based on the
3 projections, solicitations are made, bids received, and contracts are established to
4 cover a minimum of 75% of our projected needs for the coming year and 60% of
5 base load needs for a period of up to five years. Long term contracts are established
6 and maintained for gas transportation. Commodity base load contracts are currently
7 established on terms of up to five years. Typically, commodity contracts are
8 established on the basis of recognized industry price indices with appropriate
9 adders. On a short term basis, additional purchases on the spot market are made as
10 needed. PEC has recently begun financial hedging as a tool to reduce the volatility
11 of its natural gas purchases.

12 **Q. What are PEC's expectations for the forecasted period?**

13 A. The review period was marked by extremely high prices, up to \$20/mmbtu, in the
14 wake of Hurricanes Katrina and Rita which occurred during August and September.
15 PEC expects continued volatility in the gas markets. While gas prices have come
16 down since these extremely high levels, PEC's forecasted cost for the year ending
17 June 30, 2007 of \$12.11/mmbtu exceeds the \$11.52/mmbtu experienced during the
18 review period as natural gas prices for the forecast period remain strong in light of
19 the demand for natural gas and record crude oil prices.

20 **Q. Does PEC purchase power?**

21 A. Yes. PEC continually evaluates purchasing power if it can be reliably procured and
22 delivered at a price that is less than the cost of PEC's generation. In accordance
23 with 58-27-865(A) of the Code of Laws of South Carolina, PEC includes as

1 recoverable fuel cost for its economy purchases the lower of the purchase price or
2 PEC's avoided variable cost for generating an equivalent amount of power.
3 Additionally, PEC purchases power from certain vendors that is treated as firm
4 generation capacity purchases. In accordance with the statute, all of these costs are
5 recorded as recoverable fuel costs with the exception of capacity-related charges.

6 **Q. Please explain Barkley Exhibit No. 4**

7 A. Barkley Exhibit No. 4 is a summary of PEC's actual system fuel cost and kilowatt-
8 hour sales experienced during the period April 2005 through March 2006. Total
9 system fuel costs were \$1,155,452,716 and the total sales were 53,806,574,465
10 kilowatthours (kWh) for an annual average of \$.02147/kwh.

11 **Q. How did the fuel revenue billings compare to the actual fuel costs incurred
12 during the historical period April 2005 through March 2006?**

13 A. Barkley Exhibit No. 5 is a monthly comparison of fuel revenues billed to South
14 Carolina retail customers to the actual fuel costs attributable to those sales. During
15 the year ended March 31, 2006, PEC's under-recovery of fuel costs increased from
16 \$30.0 million to \$32.4 million.

17 **Q. Please explain Barkley Exhibit No. 6.**

18 A. Barkley Exhibit No. 6 presents a fuel rate of 2.554 ¢/kWh for the 12-month period
19 July 2006 through June 2007, consisting of a component for recovery of projected
20 fuel expense for this period of 2.305¢/kWh and a component to collect the
21 projected under-recovery at June 30, 2006 of .249¢/kWh. The projected under-
22 recovery at June 30, 2006 is \$34.6 million. Pursuant to the settlement approved by
23 the SCPSC in Docket No. 2005-1-E, PEC has included one half of its expected

1 June 30, 2006 deferred fuel balance for recovery in this proceeding along with
2 carrying charges for the year ending June 30, 2007. Fuel projections include the
3 latest forecasted fuel prices and include outages at the generating plants based on
4 planned maintenance and refueling schedules and forced outages based on
5 historical trends.

6 **Q. Please explain Barkley Exhibit No.7.**

7 A. Barkley Exhibit No. 7 provides projected costs and revenues, by month, for the
8 period April 2006 through June 2007. The exhibit continues the use of the current
9 base fuel component of 2.2¢/kWh through June 2006 and shows a fuel factor of
10 2.554 ¢/kWh for the period July 2006 through June 2007.

11 **Q. Were PEC's fuel costs prudently incurred during the review period?**

12 A. Yes. PEC's fuel costs were prudently incurred and accurately recorded and are
13 fully recoverable pursuant to Section 58-27-865(F) of the Code of Laws of South
14 Carolina. As explained above, PEC continuously evaluates the term and spot
15 markets for fuel and purchased power in order to determine the appropriate
16 portfolio of long term and spot purchases that ensures a reliable supply of electricity
17 to our customers at the lowest reasonable prices. Such evaluations include daily,
18 weekly and monthly solicitations and subscriptions to fuel pricing services and
19 trade publications. PEC makes fuel purchases at the best prices possible giving due
20 regard to reliability of supply needs and environmental compliance. As discussed
21 by PEC witness Sammy Roberts, PEC prudently operated its generation resources
22 during the period under review in order to minimize its fuel costs. Finally, PEC
23 purchases rather than generates power when doing so is cost effective.

1 **Q.** **Does that complete your testimony?**

2 **A.** Yes it does.

**FUEL CONSUMED, PURCHASED AND INVENTORIED
FOR THE TWELVE MONTHS ENDED MARCH 31, 2006**

<u>COAL</u>	<u>Tons</u>	<u>\$/Ton</u>
Consumed	12,365,389	\$67.50
Coal Purchased	13,131,848	\$48.61
Freight Purchased	13,131,348	\$18.95
Total Purchased	13,131,848	\$67.56
\$/mmbtu consumed	\$2.74	

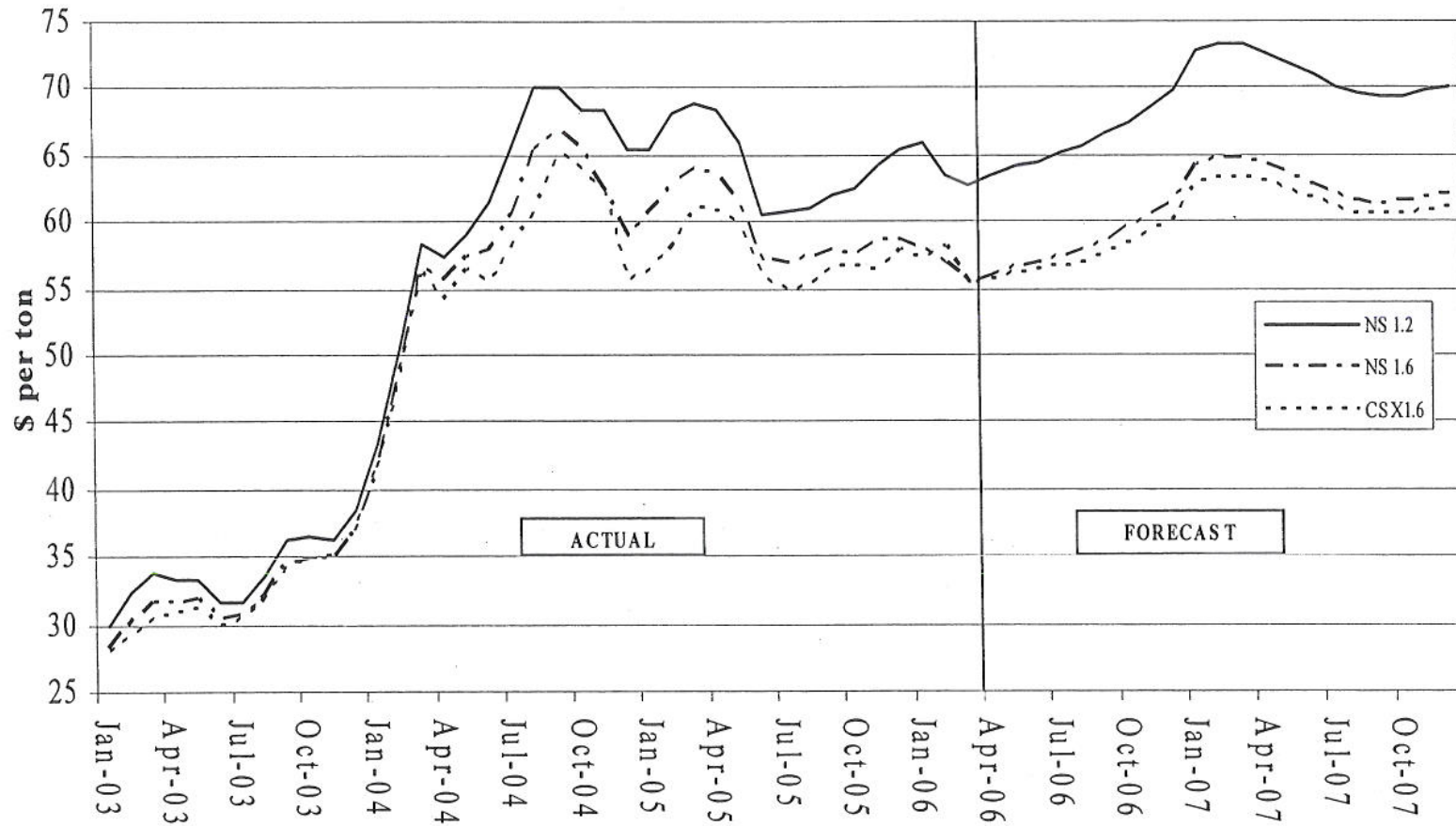
<u>OIL</u>	<u>Gallons</u>	<u>\$/Gallon</u>
Consumed	13,702,432	\$1.23
Purchased	14,191,242	\$1.70
\$/mmbtu consumed	\$8.83	

<u>NATURAL GAS</u>	<u>mmbtu</u>	<u>\$/mmbtu</u>
Consumed	19,573,271	\$11.52
Purchased	19,622,081	\$11.51

INVENTORIES AS OF MARCH 31

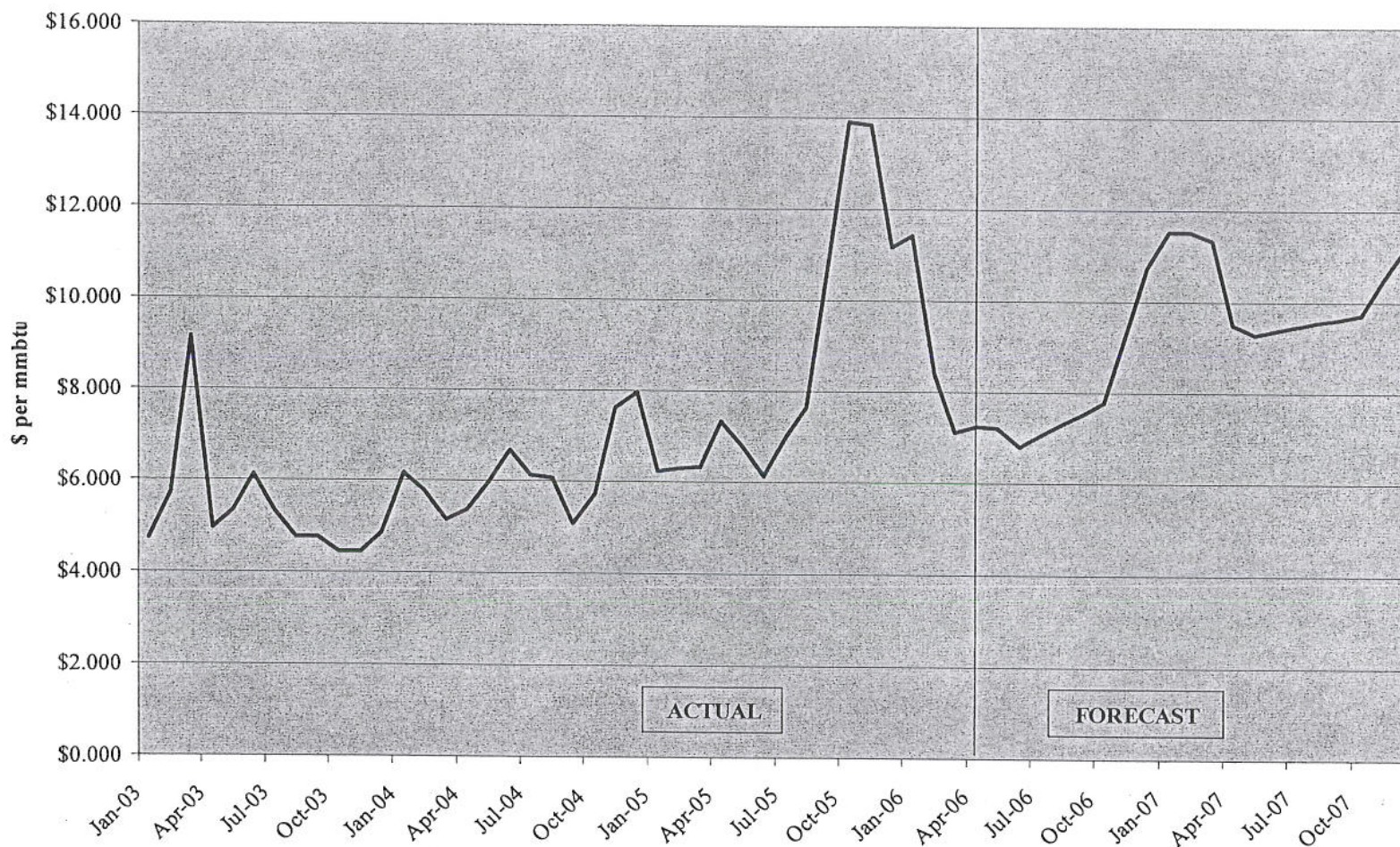
	2005 <u>Units</u>	2005 <u>\$/Unit</u>	2006 <u>Units</u>	2006 <u>\$/Unit</u>
Coal (tons)	1,212,797	\$64.25	1,979,256	\$71.48
Oil (gallons)	29,367,674	\$1.05	29,406,200	\$1.28
Natural Gas (mmbtu)	0	n/a	48,810	\$7.38

COAL PRICE TRENDS



Barkley Exhibit No. 2
Docket 2006-1-E

GAS PRICE TRENDS



Actual – NYMEX Last Day Settle Prices

Forecast – NYMEX Settle Prices as of 04/27/2006

Henry Hub Prices



PROGRESS ENERGY CAROLINAS, INC.

SYSTEM FUEL COST

SOUTH CAROLINA RETAIL FUEL CASE - Docket No. 2006-1-E
TWELVE MONTHS ENDED MARCH 2006

Line		Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Twelve Months Ended Mar-06
(1)	Coal	\$56,159,773.43	\$52,747,177.21	\$66,863,239.57	\$79,154,219.08	\$81,639,590.73	\$70,744,494.61	\$67,533,912.41	\$63,589,197.43	\$80,928,869.78	\$67,034,734.18	\$71,554,323.81	\$76,662,806.91	\$834,612,341.15
(2)	Oil - Steam	601,515.09	678,666.73	526,455.93	359,399.77	467,299.71	344,286.32	558,379.03	560,163.37	355,632.64	539,008.94	404,268.39	457,596.61	5,852,672.53
(3)	Oil - Turbine	181,650.10	170,910.44	126,043.51	1,647,185.03	2,078,685.15	1,659,863.88	232,540.83	546,323.06	3,053,465.14	144,713.15	655,764.86	497,613.51	10,994,758.66
(4)	Gas - Steam	0.00	590,315.21	437,201.11	322,666.78	676,851.12	883,552.20	(39,886.38)	(201.03)	0.00	0.00	0.00	0.00	2,870,499.01
(5)	Gas - Turbine	12,690,083.61	5,566,941.29	12,122,268.20	41,021,183.94	50,023,052.69	35,146,875.53	12,760,737.91	6,545,267.52	21,184,883.33	6,034,314.08	4,334,020.40	15,245,989.63	222,675,618.13
(6)	Total Fossil	69,633,022.23	59,754,010.88	80,075,208.32	122,504,654.60	134,885,479.40	108,779,072.54	81,045,683.80	71,240,750.35	105,522,850.89	73,752,770.35	76,948,379.46	92,864,006.66	1,077,005,889.48
(7)	Emission Allowance	1,903,148.49	(114,576.37)	2,255,679.36	2,403,386.39	2,760,810.80	2,405,821.02	2,103,493.20	1,959,605.51	2,517,399.67	1,736,182.05	1,816,566.29	1,970,214.18	23,717,730.59
(8)	Nuclear Fuel	7,620,392.23	9,408,168.72	9,429,852.06	9,396,051.33	8,875,064.79	8,654,318.90	8,296,590.90	9,811,135.82	9,907,440.82	10,203,217.70	9,245,693.44	7,811,107.35	108,659,034.06
(9)	Purchased Power	10,056,066.81	5,408,929.70	13,887,320.21	25,937,271.54	43,893,454.87	20,897,159.86	7,350,573.30	4,026,835.31	8,370,198.46	7,044,436.19	7,117,326.36	7,634,952.02	161,624,524.63
(10)	Off-System Sales	(17,335,242.30)	(8,031,920.51)	(10,281,001.42)	(19,769,218.31)	(25,801,927.80)	(18,228,501.54)	(13,135,586.42)	(19,121,107.92)	(29,250,945.39)	(16,632,906.97)	(20,405,886.61)	(17,560,217.39)	(215,554,462.67)
(11)	Total Fuel Costs	\$71,877,387.37	\$66,424,612.42	\$95,367,058.53	\$140,472,145.55	\$164,612,882.06	\$122,507,870.78	\$85,660,754.78	\$67,917,219.07	\$97,066,944.45	\$76,103,699.32	\$74,722,078.94	\$92,720,062.82	\$1,155,452,716.09
(12)	Total kWh Sales	4,027,432,742	3,812,643,148	4,321,820,079	4,998,726,643	5,754,166,694	5,125,479,257	4,306,669,403	3,867,735,762	4,461,656,749	4,628,323,512	4,341,895,947	4,190,024,529	53,806,574,465
(13)	Cost per kWh	\$0.01785	\$0.01742	\$0.02207	\$0.02810	\$0.02876	\$0.02390	\$0.01989	\$0.01756	\$0.02176	\$0.01644	\$0.01721	\$0.02213	\$0.02147

PROGRESS ENERGY CAROLINAS, INC.

Comparison of Actual Fuel Revenues and Expenses
SOUTH CAROLINA RETAIL FUEL CASE - Docket No. 2006-1-E
TWELVE MONTHS ENDED MARCH 2006

<u>Line</u>		<u>Apr-05</u>	<u>May-05</u>	<u>Jun-05</u>	<u>Jul-05</u>	<u>Aug-05</u>	<u>Sep-05</u>	<u>Oct-05</u>	<u>Nov-05</u>	<u>Dec-05</u>	<u>Jan-06</u>	<u>Feb-06</u>	<u>Mar-06</u>	<u>Twelve Months Ended Mar-06</u>
(1)	Actual SC Retail Sales [KWH]	595,849,090	525,062,896	599,052,091	657,012,345	731,975,843	704,401,122	588,096,714	527,743,322	573,412,625	608,165,682	594,662,360	558,556,296	7,263,990,386
(2)	Actual Fuel Cost [\$ / KWH]	0.01785	0.01742	0.02207	0.0281	0.02876	0.0239	0.01989	0.01756	0.02176	0.01644	0.01721	0.02213	
(3)	Fuel Base [\$ / KWH]	0.01471	0.01471	0.01471	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	
(4)	Revenue Required [\$]	10,635,906	9,146,596	13,221,080	18,462,047	21,051,625	16,835,187	11,697,244	9,267,173	12,477,459	9,998,244	10,234,139	12,360,851	155,387,551
(5)	Revenue Billed [\$]	8,764,940	7,723,675	8,812,056	14,454,272	16,103,469	15,496,825	12,938,128	11,610,353	12,615,078	13,379,645	13,082,572	12,288,239	147,269,252
(6)	Over (Under) Recovery [\$]	(1,870,966)	(1,422,921)	(4,409,024)	(4,007,775)	(4,948,156)	(1,338,362)	1,240,884	2,343,180	137,619	3,381,401	2,848,433	(72,612)	(8,118,299)
(7)	Accounting Adjustments [\$]	-	5,378,318	0	0	412,794	0	0	0	0	0	0	0	5,791,112
(8)	Cumulative Under Recovery [\$]	(31,912,298)	(27,956,901)	(32,365,925)	(36,373,700)	(40,909,062)	(42,247,424)	(41,006,540)	(38,663,360)	(38,525,741)	(35,144,340)	(32,295,907)	(32,368,519)	

PROGRESS ENERGY CAROLINAS, INC.

SOUTH CAROLINA RETAIL FUEL CASE - DOCKET 2006-1-E

CALCULATION OF BASE FUEL COMPONENT

April 2006

1. Projected Fuel Expense from July 2006 through June 2007

Cost of Fuel	\$1,269,576,899
System Sales	55,088,846 Mwhts
Average Cost Per KWH	2.305 cents

2. Revenue Difference To be Collected from July 2006 through June 2007

50% Under-Recovery at June 2006	\$17,288,402
Interest on Average Balance	<u>\$1,555,956</u>
Total	\$18,844,358
Projected S.C. Retail Sales	7,568,979 Mwhts
Average Cost Per KWH	0.249 cents

3. Base Fuel Cost Per KWH - Projected Period

Average Fuel Cost	2.305 cents
Revenue Difference	<u>0.249 cents</u>
Base Fuel Component	2.554 cents

PROGRESS ENERGY CAROLINAS, INC.

Comparison of Actual Fuel Revenues and Expenses
SOUTH CAROLINA RETAIL FUEL CASE - Docket No. 2006-1-E

Line		Apr-06	May-06	Jun-06	Jul-06	Aug-06	Sep-06	Oct-06	
(1)	Estimated SC Retail Sales (kWh)	554,481,869	565,069,123	651,123,303	703,564,103	731,299,305	694,735,312	590,996,669	
(2)	Estimated Fuel Cost [\$ /KWH]	0.01905	0.02341	0.02668	0.03290	0.02888	0.02087	0.01946	
(3)	Fuel Base [\$ /KWH]	0.02200	0.02200	0.02200	0.02554	0.02554	0.02554	0.02554	
(4)	Revenue Required	\$10,562,880	\$13,228,268	\$17,371,970	\$23,147,259	\$21,119,924	\$14,499,126	\$11,500,795	
(5)	Revenue Billed	\$12,198,601	\$12,431,521	\$14,324,713	\$17,969,027	\$18,677,384	\$17,743,540	\$15,094,055	
(6)	Over (Under) Recovery	\$1,635,721	(\$796,747)	(\$3,047,257)	(\$5,178,232)	(\$2,442,540)	\$3,244,414	\$3,593,260	
(7)	Interest				(\$129,663)	(\$129,663)	(\$129,663)	(\$129,663)	
(8)	Cumulative Under-Recovery	(\$30,732,799)	(\$31,529,546)	(\$34,576,803)	(\$39,884,698)	(\$42,456,901)	(\$39,342,150)	(\$35,878,553)	

Line		Nov-06	Dec-06	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07
(1)	Estimated SC Retail Sales (kWh)	534,872,666	609,438,199	689,653,106	629,059,390	585,651,423	563,163,683	574,539,496	662,005,273
(2)	Estimated Fuel Cost [\$ /KWH]	0.01891	0.02142	0.01993	0.02210	0.02114	0.01994	0.02332	0.02472
(3)	Fuel Base [\$ /KWH]	0.02554	0.02554	0.02554	0.02554	0.02554	0.02554	0.02554	0.02554
(4)	Revenue Required	\$10,114,442	\$13,054,166	\$13,744,786	\$13,902,213	\$12,380,671	\$11,229,484	\$13,398,261	\$16,364,770
(5)	Revenue Billed	\$13,660,648	\$15,565,052	\$17,613,740	\$16,066,177	\$14,957,537	\$14,383,200	\$14,673,739	\$16,907,615
(6)	Over (Under) Recovery	\$3,546,206	\$2,510,886	\$3,868,954	\$2,163,964	\$2,576,866	\$3,153,716	\$1,275,478	\$542,845
(7)	Interest	(\$129,663)	(\$129,663)	(\$129,663)	(\$129,663)	(\$129,663)	(\$129,663)	(\$129,663)	(\$129,663)
(8)	Cumulative Under-Recovery	(\$32,462,010)	(\$30,080,787)	(\$26,341,496)	(\$24,307,195)	(\$21,859,992)	(\$18,835,939)	(\$17,690,124)	(\$17,276,942)